

Water facts

#2 Wells, Springs and Livestock

October 2006

Springs

Vashon-Maury Island is graced with many springs. In fact most of the rain water that infiltrates into the ground eventually squirts out the side of the Island somewhere. You will find springs emerging on the Island's perimeter where permeable sediment sits on top of less permeable sediment. Follow a small stream to its source and you are likely to find a muddy patch where groundwater finally gets to see day light.

One method of collecting spring water is a floorless concrete cylinder that is set into the ground. The spring water then fills the tank from the bottom. Many of the public water systems on the Island capture ground water before it actually emerges as a spring. To capture the ground water, they use wellpoints which are hollow pipes with several holes drilled through them at one end. The pipe is pounded into the ground or hillside to intercept the water before it comes into contact with the surface. Water systems will often employ several of these well points in a given area. Many are very shallow, only 5-15 feet deep. The top of the well point that is above ground is fitted with pipes to carry the water to a storage tank where it is treated with disinfectant (usually chlorine) before it is distributed to customers.

Wells

In the past, holes were dug by hand until you hit water. These wells are quite wide in diameter (3-5 feet) and can be up to 40 feet deep. They are lined with bricks or stone or other materials to keep the sides from caving in.

Wells are now drilled by machines which create a 4-8 inch diameter hole. The hole is lined with a metal pipe casing and groundwater is allowed to enter the casing at the bottom through an open end, perforated holes, or screens. Usually clay material which water cannot soak through is used to pack around the outside of the well so that surface water can't simply trickle down along the outside of the well casing and contaminate the aquifer.

Shallow wells that are less than 20 feet deep can use a suction pump situated on the surface while deeper wells must utilize a submersible pump that is lowered down below the water table. Many homeowners have pressure tanks in the well house which are fitted with rubber diaphragms that con-

tract as water is used keeping the water pressure in the house relatively constant. When the water level in the tank gets too low, the pump kicks on to refill the pressure tank.

Caring for Your Well or Spring

Public water systems are required by the state Health Department to periodically test their water for a variety of potential contaminants. Although it is not required by law, private well owners may want to test their water, just to make sure it remains safe. Consider testing for coliform bacteria and nitrates at least annually or, better yet, in the

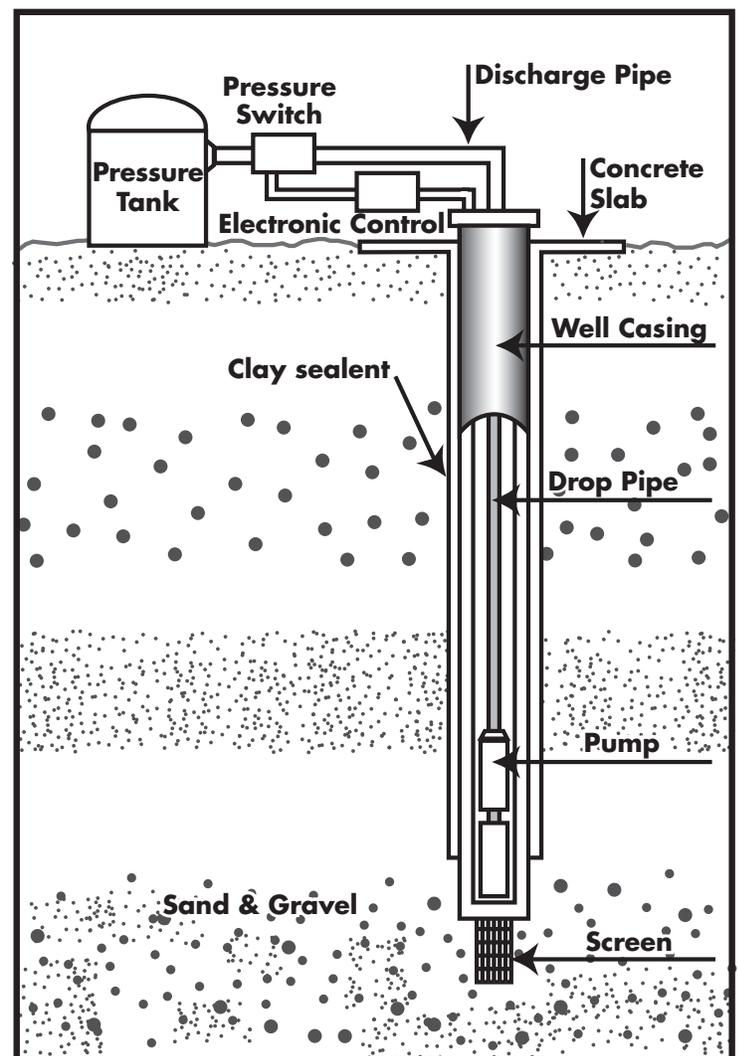


Diagram of a conventional well.

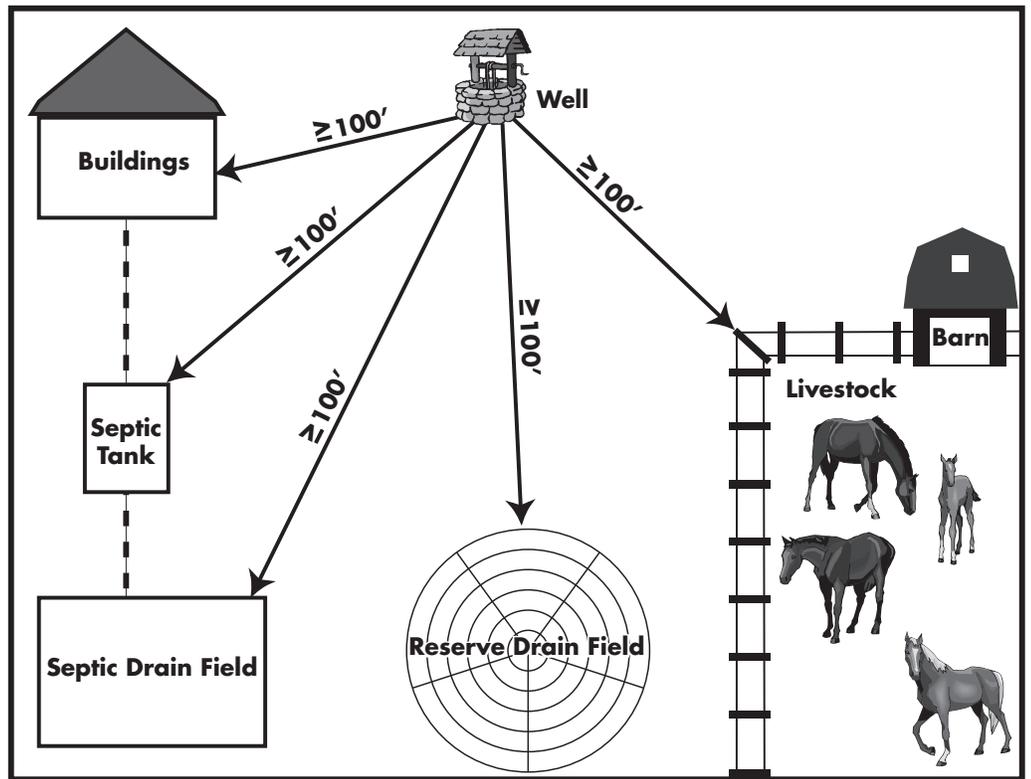
Islanders working together to protect our groundwater

Produced by Susie Kalhorn for the Vashon-Maury Island Groundwater Protection Committee

dry season and in the wet season.

Should your test samples come back positive for bacteria, check out the Seattle-King County Health Department's methodology to disinfect your well or spring facilities at: <http://www.metrokc.gov/health/water/wells.htm>. Be sure to submit another test(s) after the cleaning is complete.

Consider land use activities within the vicinity of your well or spring. One landowner recently noted that the nitrates in her shallow well may have gone up because she utilized a lot of fresh horse manure in her garden which is only about 15 feet from her well. It is difficult to definitively pinpoint the source of her nitrates, but it always helps to think about how your activities might affect water. Remember, what you put on the ground today, you may be drinking tomorrow!



Distance requirements from a well.



Horses and other Livestock

Many equestrians live on the Island and there are a variety of livestock from cows to goats to emus that call this place home. Health officials advise the fencing of livestock at least 100 feet

away from a well. If your water source is a spring, you should locate your animals and septic system at least 200 feet away.

Site planning with livestock in mind can be a challenge because not only do you need to be concerned with your well, but you don't want large animals compacting your septic system drainfield either. Horse owners may be interested in educational programs put on by "Horses for Clean Water." These workshops give you practical guidance on keeping your horse healthy through site planning, mud, and manure management. Another option for all livestock owners is the Washington State University's "Livestock Management" classes and the King Conservation District which can help you develop your own farm management plan.

Resources

Island Resources

Statewide Drilling Co (wells)	206 772-5771
Island Pump and Water System Service	206 463-1650
Island Horse Information	kharazi@aol.com

Funded By: **PUGET SOUND ACTION TEAM**
Office of the Governor, State of Washington

Other Resources

Seattle-King County Department of Health
Drinking Water Program
www.metrokc.gov/health/water/index.htm

Horses for Clean Water
www.horsesforcleanwater.com

King Conservation District:
www.kingcd.org

WSU King County Extension:
www.metrokc.gov/ws%2Dce/Livestock